

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the claims

1. (withdrawn): An apparatus for the treatment of body conduits, the apparatus comprising:

an elongated body configured to be inserted into a body conduit, the elongated body having a proximal end and a distal end; and

a source of energy for emitting energy from the elongated body in an intensity which, when applied to walls of the body conduit causes a change in smooth muscle tissue which prevents the smooth muscle tissue from replicating.

2. (withdrawn): The apparatus of Claim 1, wherein the source of energy is a source of light energy and the apparatus further comprises:

a light transmitting fiber extending from the proximal end to the distal end of the elongated body for transmitting light into the body conduit;

a connector on the distal end of the elongated body for connecting the elongated body to the source of light energy; and

a light directing member positioned at a distal end of the elongated device for diffusing or redirecting the light from the light transmitting fiber in a substantially radial pattern from the distal end of the elongated device.

3. (withdrawn): The apparatus of Claim 2, wherein the source of light delivers light having a wavelength of about 240 nm to about 280 nm.

4. (withdrawn): The apparatus of Claim 2, wherein the source of light delivers light in the red visible range.

5. (withdrawn): The apparatus of Claim 1, wherein the source of energy delivers energy having a wavelength and intensity which, when applied to the walls of the

body conduit crosslinks DNA in smooth muscle cells surrounding the conduit and prevents the smooth muscle cells from replicating.

6. (withdrawn): The apparatus of Claim 2, wherein the light directing member includes a substantially conical reflective surface which redirects light from the light transmitting fiber in a direction away from a longitudinal axis of the fiber.

7. (withdrawn): The apparatus of Claim 6, wherein the reflective surface is concave in cross section.

8. (withdrawn): The apparatus of Claim 6, wherein the reflective surface is substantially planar in cross section.

9. (withdrawn): The apparatus of Claim 6, wherein the reflective surface is substantially parabolic in cross section.

10. (withdrawn): The apparatus of Claim 2, wherein the light directing member includes a diffusing lens which directs light from the transmitting fiber in a direction away from a longitudinal axis of the fiber.

11. (withdrawn): The apparatus of Claim 2, wherein the light transmitting fiber is surrounded by a sheath for delivery to the airway.

12. (withdrawn): The apparatus of Claim 11, wherein the sheath includes a distal end section which is transparent to the energy emitted by the light source.

13. (withdrawn): The apparatus of Claim 11, wherein the sheath includes a distal section having a plurality of windows which are transparent to the energy emitted by the light source to allow the light which has been redirected by the light directing member to exit the sheath.

14. (withdrawn): The apparatus of Claim 1, wherein the source of energy is a radioactive pellet positioned at the distal end of the elongated body.

15. (withdrawn): The apparatus of Claim 1, wherein the source of energy is a radioactive pellet which is movable longitudinally within the elongated body to treat the body conduit.

16. (withdrawn): An apparatus for the treatment of walls of airways in a patient's lungs, the apparatus comprising:

an elongated body configured to be inserted into the airways of a patient's lungs, the device having a proximal end and a distal end;

a source of energy for emitting energy from the distal end of the elongated body in an intensity which, when applied to the walls of the airway causes a change in smooth muscle tissue which prevents the smooth muscle tissue from replicating.

17. (withdrawn): The apparatus of Claim 16, wherein the source of energy is a light source and the apparatus further comprises:

a light transmitting fiber extending from the proximal end to the distal end of the elongated body for transmitting light from the light source into the patient's lungs;

a connector on the distal end of the elongated body for connecting the elongated body to the source of light; and

a light directing member positioned at a distal end of the elongated device for diffusing or redirecting the light from the light transmitting fiber in a substantially radial pattern from the distal end of the elongated device.

18. (withdrawn): The apparatus of Claim 16, wherein the source of energy delivers energy having a wavelength and intensity which, when applied to the walls of the airway crosslinks DNA in smooth muscle cells surrounding the airway and prevents the smooth muscle cells from replicating.

19. (withdrawn): The apparatus of Claim 16, wherein the source of energy delivers energy having a wavelength and intensity which, when applied to the walls of the airway crosslinks DNA in mucus gland cells surrounding the airway and prevents the mucus gland cells from replicating.

20. (withdrawn): An apparatus for the treatment of walls of an esophagus, the apparatus comprising:

an elongated body configured to be inserted into the esophagus, the elongate body having a proximal end and a distal end; and

a source of energy for emitting energy from the elongated body in an intensity which, when applied to the walls of the esophagus causes a change in smooth muscle tissue which prevents the smooth muscle tissue from replicating.

21. (withdrawn): The apparatus according to Claim 20, wherein the source of energy is a light source and further comprising:

a light transmitting fiber extending from the proximal end to the distal end of the elongated body for transmitting light into the esophagus;

a connector on the distal end of the elongated body for connecting the elongated body to the source of light; and

a light directing member positioned at a distal end of the elongated device for diffusing or redirecting the light from the light transmitting fiber in a substantially radial pattern from the distal end of the elongated device.

22. (withdrawn): The apparatus of Claim 21, wherein the light source delivers light having a wavelength of about 240 nm to about 280 nm, or delivers light in the red visible range.

23. (withdrawn): The apparatus of Claim 20, wherein the source of energy is a radioactive pellet positioned within the elongated body.

24. (withdrawn): An apparatus for treatment of walls of a ureter or urethra, the apparatus comprising:

an elongated body configured to be inserted into the ureter or urethra, the device having a proximal end and a distal end; and

a source of energy for emitting energy from the elongated body in an intensity which, when applied to the walls of the ureter or urethra causes a change in smooth muscle tissue which prevents the smooth muscle tissue from replicating.

25. (withdrawn): The apparatus of Claim 24, wherein the source of energy is a light source and further comprising:

a light transmitting fiber extending from the proximal end to the distal end of the elongated body for transmitting light into the ureter or urethra;

a connector on the distal end of the elongated body for connecting the elongated body to the source of light; and

a light directing member positioned at a distal end of the elongated device for diffusing or redirecting the light from the light transmitting fiber in a substantially radial pattern from the distal end of the elongated device.

26. (withdrawn): The apparatus of Claim 25, wherein the light source delivers light having a wavelength of about 240 nm to about 280 nm, or delivers light in the red visible range.

27. (withdrawn): The apparatus of Claim 24, wherein the source of energy is a radioactive pellet positioned within the elongated body.

28. (previously presented): The method of claim 50 wherein said irradiating step is performed by irradiating smooth muscle tissue in an asthmatic lung.

29. (previously presented): The method of Claim 28, wherein said irradiating step is performed by emitting a light energy having a wavelength of about 240 nm to about 280 nm.

30. (previously presented): The method of Claim 28, wherein said irradiating step is performed by emitting light energy having a wavelength in the red visible range.

31. (previously presented): The method of Claim 28, wherein said irradiating step is performed by exposing the walls to radiation emitted by a radioactive pellet.

32. (previously presented): The method of Claim 28, wherein said irradiating step is performed by moving an energy delivery device along the airway.

33. (previously presented): A method for treating a lung comprising the step of irradiating the walls of an airway with a wavelength and intensity sufficient to cause debulking over time in mucus gland cells and preventing the mucus gland cells from replicating.

34. (original): The method of Claim 33, wherein said irradiating step is performed by emitting a light energy having a wavelength of about 240 nm to about 280 nm.

35. (original): The method of Claim 33, wherein said irradiating step is performed by emitting light energy having a wavelength in the red visible range.

36. (original): The method of Claim 33, wherein said irradiating step is performed by exposing the walls to radiation emitted by a radioactive pellet.

37. (original): The method of Claim 33, wherein said irradiating step is performed by moving an energy delivery device along the airway.

38. – 47. (cancelled)

48. (withdrawn): A method of training a person to treat a body conduit by irradiation comprising demonstrating or instructing the steps of:

irradiating walls of a body conduit with energy in wavelength and intensity which causes a change in smooth muscle tissue cells and prevents the, smooth muscle tissue cells from replicating; and

controlling spasms of smooth muscle tissue by elimination or reduction in the smooth muscle tissue surrounding the body conduit.

49. (withdrawn): The method of Claim 48, wherein the body conduit is selected from a group consisting of an airway in a lung, an esophagus, a ureter, and a urethra.

50. (currently amended): A method of treating ~~a lung to affect~~ lung tissue to relieve asthmatic symptoms, the method comprising:

providing a source of energy;

irradiating the walls of an airway of the lung with the source of energy at a wavelength and intensity which, over time, causes debulking of the lung tissue and prevents the lung tissue from replicating.

51. (cancelled)